

## ABSTRACT

5 A cache-based system is adapted for dynamic cache partitioning. A cache is partitioned into a plurality of cache partitions for a plurality of entities. Each cache partition can be assigned as a private cache for a different entity. If a first cache partition satisfying a first predetermined cache partition condition and a second cache partition satisfying a second predetermined cache partition condition are detected, then the size of the first cache partition is increased by a predetermined segment and the size of the second cache partition is decreased by the predetermined segment. An entity can perform cacheline replacement exclusively in its assigned cache partition, and also be capable of reading any cache partition.